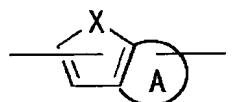


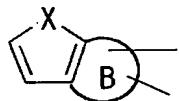
Claims

1. A polymer film comprising a polymer having liquid crystallinity, having a number-average molecular weight in terms of polystyrene of 10^3 to 10^8 and having an electron mobility or hole mobility of 10^{-5} cm²/Vs or more, and having a film thickness in the range from 1 nm to 100 μ m.

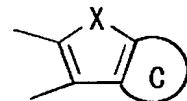
2. The polymer film according to Claim 1, wherein the polymer contains repeating units of the following formula (1-1), (1-2), (1-3), (1-4) or (1-5):



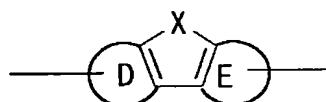
(1-1)



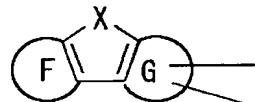
(1-2)



(1-3)



(1-4)



(1-5)

(wherein, X represents a hetero atom or a divalent group containing hetero atoms, and A ring, B ring, C ring, D ring, E ring, F ring and G ring represent each independently an aromatic ring optionally having a substituent selected from the group consisting of alkyl groups, alkoxy groups, alkylthio groups, aryl groups, aryloxy groups, arylthio groups, arylalkyl groups, arylalkoxy groups, arylalkylthio groups, arylalkenyl groups, arylalkynyl groups, amino groups, substituted amino

groups, silyl group, substituted silyl groups, halogen atoms, acyl groups, acyloxy groups, imino groups, amide groups, imide groups, monovalent heterocyclic groups, carboxyl group, substituted carboxyl groups and cyano group.).

3. The polymer film according to Claim 2, wherein X represents S, O or SiRR' (wherein, R and R' represent each independently a hydrogen atom, halogen atom, hydroxyl group, alkyl group, alkoxy group, alkylthio group, aryl group, aryloxy group, arylthio group, arylalkyl group, arylalkoxy group, arylalkylthio group, substituted amino group, or monovalent heterocyclic group).

4. A method of producing the polymer film according to any of Claims 1 to 3, using a spin coat method, inkjet printing method or flexo printing method.

5. A method of producing the polymer film according to any of Claims 1 to 3, comprising the step of orienting a polymer by a rubbing method or shearing method.

6. A polymer film device, comprising the polymer film according to any of Claims 1 to 3.

7. A film transistor, comprising the polymer film according to any of Claims 1 to 3.

8. A solar battery, comprising the polymer film according to any of Claims 1 to 3.

9. An optical sensor, comprising the polymer film according to any of Claims 1 to 3.

10. An electrophotographic photoreceptor, comprising the polymer film according to any of Claims 1 to 3.

11. A spatial light modulator, comprising the polymer film according to any of Claims 1 to 3.

12. A photorefractive device, comprising the polymer film according to any of Claims 1 to 3.